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Prevalence and characteristics of dual non responsiveness to aspirin and clodiprogel in a cohort of 430 stable cardiovascular patients. Insight from the adrie study on stable cardiovascular patients

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Background: Residual platelet reactivity (RPR) has been shown to be related to adverse cardiovascular events. However, assessment of residual platelet reactivity was often evaluated in heterogeneous populations including both patients with stable disease and acute coronary syndrome.

Objectives: We aim to delineate determinants of RPR in a cohort of stable cardiovascular patients.

Methods: We included 750 stable cardiovascular patients treated for at least one month with aspirin (n=213), clopidogrel (n=107) or both (n=425). We evaluated RPR using collagen platelet aggregation (CPA), collagen being a stimulus not directly involved in the specific pathways of aspirin and clopidogrel.

Results: Mean age was 65±12 years, 76% were male; the mean duration of the CV disease was 1.6 years. CPA ranged from 6% to 96% in our population. CPA was of 41+/-16, 61+/-14 and 28+/-15% in aspirin, clopidogrel and dual treatment groups, respectively (P<0.001). In univariate analysis of relevant biological and clinical parameters, antiplatelet drug treatment pattern (P<0.001), diabetes (P=0.006), hypertension (P=0.01) and a pain-free walking distance < 200^{m} (P=0.02) were associated with CPA. Multivariate analysis showed that antiplatelet drug treatment pattern (P<0.0001) and diabetes (P=0.0007) were independent factors associated with CPA.

Conclusion: Aspirin had a more pronounced effect on CPA than clopidogrel in stable cardiovascular patients. Even after adjustment for antiplatelet drug pattern, diabetes remains an independent factor associated with CPA. These results give new insight into the controversy about the beneficial effect of antiplatelet drugs in this particular group of patients

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Prognostic value of cortisol, insulin and thyroid hormones levels in ST elevation acute myocardial infarction

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Thyroid hormones, cortisol and insulin affect the metabolism of myocardial cells. Their secretion can be altered in case of ST elevation acute myocardial infarction (STEMI) and their prognostic value is not well established.

The aim of this study was evaluate the hormonal profile and its correlation with patient's outcome in STEMI.

Methods and results: 186 consecutive patients (162 males, 87%) with STEMI were prospectively enrolled. Blood sampling for insulin, cortisol, thyreostimulin (TSH), free thyroxin (FT4), triiodothyronin (T3) and free triiodothyronin (FT3) level measurements were performed in the 24 hours after admission. Patients who died within the first 24 hours were excluded. Mean follow-up period was 17,2 [12-28.8] months. We distinguished 2 groups, with (MACE1+) and without (MACE1-) in-hospital complications (Death and/or shock and/or left ventricular insufficiency and/or myocardial infarction and/or revascularization) and 2 groups, with (MACE2+) or without (MACE2-) late complications (Death and/or cardiac insufficiency and/or myocardial infarction and/or revascularization).The mean age of patients was 58.4 ± 12.6 years. 77.9% were smokers, 35.4% were diabetics, 37% were hypertensive, 18.8% had a dyslipemia, 17.2% had a history of familial coronary disease and 4.3% of patients had a renal insufficiency. Hormonal levels were as follows: insulin=12.6±20.5 mU/l, cortisol=250.4±37 ng/ml, TSH=2.3±8.3µU/l, FT4=10.2±3 ng/l, T3=0.83±0.23 pg/l, FT3=2.04±3ng/l. Differences in hormonal levels between MACE1+ and MACE1- groups were significant for cortisol (289.5±304.9 vs 217.5±110.2 ng/l, p=0.033) and T3 (0.83±0.23 vs 0.77±0.2 pg/l, p=0.001). Threshold values determined by ROC curves were 380 ng/l for the cortisol and 0.95 pg/l for T3. In a multivariate model, only T3 was independently correlated with in-hospital outcome (OR=3.9, IC [1.6-9.8]). There was no correlation between hormonal levels and late outcome.

In Conclusion: T3 affect short but not long term STEMI prognosis. The usefulness of routine hormonal measurement and the therapeutic implications are still to determine.

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Management of patients with acute coronary syndrome undergoing percutaneous coronary intervention: one year follow-up results from the French cohort in the AntiPlatelet Treatment Observational study

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Purpose: To describe antiplatelet treatment patterns over 12 months in patients with acute cornary syndrome (ACS) undergoing percutaneous coronary intervention (PCI).

Methods: The AntiPlatelet Treatment Observational Registry (APTOR) is a prospective, international observational study that recruited ACS patients undergoing PCI in 2007-08, capturing practice patterns, treatment and ressources use over 12 months. Interventional cardiologists collected data from ACS event to hospital discharge and general practitioners and cardiologists collected follow-up data.

Results: 483 eligible ACS-PCI patients had mean age 61 (13) years, mean weight 80 (15) kg, were 18% female, 47% with ST-elevation MI (STEMI) and 53% with unstable angina or non-ST elevation MI (UA/NSTEMI). Follow-up data up to 12 months are available for 396 (82%) patients. Among patients who were discharged and had follow-up data, 94% were receving clopidogrel at time of hospital discharge. Cardiovascular combination therapy was prescribed as follows: aspirin (95%), statins (82%), beta-blockers (82%), ACE inhibitors/ARBs (68%); each of these treatments was globally maintained over 12 months. Lifestyle therapies increased over 12 months from 12% to 57% for formal diet program and 11% to 48% for formal exercise program. Over 12 months, on 394 patients, overall clopidogrel use was 94% at 30 days, 80% at 6 months, and 75% at 12 months. Amongst 83 patients who stopped clopidogrel before 12 months, 48% discontinued during the first three months.

Conclusions: These prospective data showed that after an ACS event 20% of patients have already dropped out their clopidogrel treatment at 6 months and 25% at 12 months.

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Enoxaparin Anticoagulation Monitoring in the Catheterization Laboratory Using a New Point-of-Care test

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Background: Inadequate anticoagulation in patients undergoing percutaneous coronary Intervention (PCI) is associated with more frequent periprocedural ischemic events.

Methods: We evaluated the ability of the bedside Hemonox test to identify patients with an anti-Xa activity level out of the therapeutic range in 296 unse-

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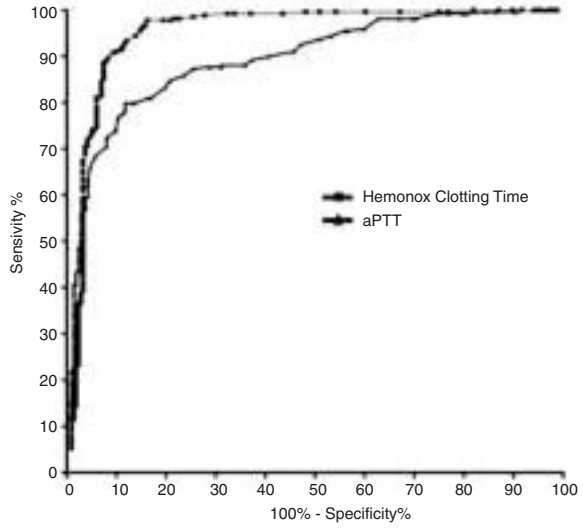
lected patients undergoing catheterization and/or PCI. Bedside measure of whole blood Hemonox Clotting Time (CT) and activated Partial Prothrombin Time (aPTT) were measured at baseline (T1) and 10' after the IV administration of enoxaparin (T2) in patients receiving additional enoxaparin and compared to differed plasma chromogenic anti-Xa (AXA) activity measurement.

Results: Median [IQR] values were 0.1 [0.1-0.1] and 0.87 [0.74-1.03] IU/mL for AXA; 74 [70-81] and 143 [114-206] sec for Hemonox CT, and 44 [39-50] and 72 [58-93] sec for aPTT at T1 and T2 time points, respectively. Hemonox CT strongly correlated with Anti-Xa level spearman r=0.81 (95% CI 0.77-0.84, p<0.0001). When comparing a total of 486 values to discriminate patients with AXA <0.5 IU/mL, the area under the receiver operating curve (AUC) for Hemonox CT was 0.95 ± 0.01 (95% IC; 0.93-0.97; p<0.0001) versus 0.89 ± 0.01 (95% IC; 0.86-0.92; p<0.0001) for aPTT. A threshold Hemonox CT value of 120 sec was associated with a 94.9% (95% CI 91.1-97.4) sensitivity and a 73.3% (95% IC 67.6-78.5) specificity with a likelihood ratio = 3.5 to detect patients with inadequate anti-Xa level (<0.5UI/mL). With this threshold the positive predictive and negative predictive values of Hemonox CT as a diagnosis test were 73.9% (95% IC 68.7-79.0) and 94.78% (95% IC 91.8-97.8) respectively.

Conclusion: According to the results of this study Hemonox CT appears to be a fast and reliable bedside test that could be used to adjust enoxaparin anticoagulation in PCI.



ROC for Hemonox CT and aPTT to detect Axa<0.5UI/ml

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Differences in clinical presentation and 6-month outcomes in different age classes of elderly patients (75-80, 81-85, and >85 years). Data from prospective, nationwide, French PAPI registry

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Background: Percutaneous coronary interventions (PCI) are proposed with increasing frequency to elderly and very elderly patients (pts) owing to the high prevalence of coronary disease in this age group. There are limited data about differences between aged and very aged pts in respect to risk factors, co morbidities and outcomes after PCI.

Objectives: We sought to define the differences in clinical presentation and outcomes in different age classes in elderly pts treated by PCI with stent implantation.

Methods: 1955 pts aged >75 years (62% men, mean age 80.3±3.8 years) treated by 2072 PCI with 3352 stents implantations were prospectively included in this study.

Results: There were 936 pts (47.8%) aged 75-80 years, 707 pts (36.2%) between 81 and 85 years and 312 pts (16.0%) aged >85 years. Elderly and very elderly pts had less cardiovascular risk factors (hypercholesterolemia: 58% vs 54% vs 45%, p=0.01, diabetes: 36% vs 35% vs 32%, p=0.02, familial history of ischemic heart disease: 17% vs 12% vs 9.3%, p=0.002) but more often renal failure at admission (48% vs 65% vs 72% p<0.001). Unstable coronary syndromes as n indications for stenting increased with age (37% vs 44% vs 51%) p<0.001) as well as lesions concerning left main coronary disease or bypass grafts (p=0.04). 6-month cardiac mortality rate increased with age (1.6% vs 2.8% vs 5.2%, p=0.008) as well as cerebral vascular events (0.1% vs 0.8% vs 1.2%, p=0.03) while the rate of non fatal myocardial infarction remained similar (1.4 % vs 2.0 % vs 2.4%, p=NS).

Conclusion: there are several difference in clinical presentation and 6-month outcomes in different age classes in elderly pts with ischemic heart disease treated by PCI with stent implantation with worse results in very elderly (>85%) pts.

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Early thrombolysis using streptokinase in acute myocardial infarction: Results from Monastir AMI registry

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Background: Primary angioplasty for acute myocardial infarction (PAMI) proved superior to thrombolysis in many major trials. However, PAMI is available in only limited number of centers particularly in developing countries. On the other hand, it was clearly shown that thrombolysis when given early is associated with a comparable outcome to PAMI. It is however not known if this can apply to streptokinase (SK) that is the most widely used lytic agent in developing countries.

Objective: The aim of this study was to assess the in-hospital outcome of patients given early thrombolysis using SK.

Methods: From the Monastir AMI registry including 1148 patients, 403 received SK therapy. This population was divided into three groups based on the delay between the onset of symptoms and treatment: Group I: 0 – 3 hours (n= 208), Group II: 3 – 6 hours (n= 145) and Group III more than 6 hours (n = 50). Mean age was 60.3 +/- 12 years, 349 (86.6 %) were male. Baseline characteristics were similar between the three groups.

Results: Clinical reperfusion defined as sedation of chest pain and ST elevation regression for more than 50% from baseline was observed in 75.1 % of Group I, 58.8% of Group 2 and in 46.8 % of Group 3 pts. (p < 0.01). In hospital mortality and complications are compared between the three groups in the table below.

Conclusion: Early thrombolysis (less than 3 hours from chest pain onset) using streptokinase is associated with a very high percentage of clinical reperfusion (75%), a lower rate of heart failure and mortality. These results have important clinical implications particularly in developing countries.

	Group I	Group II	Group III	p
Heart failure	31 (14.9%)	37 (25.5%)	18 (36%)	0.001
Ventricular fibrillation	8 (3.8%)	10 (6.9%)	2 (4%)	0.407
Ventricular tachycardia	6 (2.9%)	10 (6.9%)	4 (8%)	0.133
Pericarditis	10 (4.8%)	7 (4.8%)	4 (8%)	0.636
Death	14 (6.7%)	9 (6.2%)	7 (14%)	0.166